

Operating Experience Weekly Summary 97-52

December 19 through December 25, 1997

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EVENTS

1. INSUFFICIENT PARTICIPATION IN JOB-SPECIFIC BIOASSAY PROGRAM

On December 17, 1997, at the Savannah River Site, the safety and health operations manager reported that only 33 percent of the workers required to provide job-specific bioassays did so. This problem was identified during a May 1997, assessment of the Site Bioassay Program that was undertaken to determine if the program had problems similar to those DOE identified at the Mound Plant. Assessors reviewed a limited sample of facilities where radiation work permits requiring job-specific bioassay samples for actinides were used. Of the 3,200 bioassay requirements reviewed, assessors determined that the routine bioassay program covered 95 percent of the workers and all had submitted bioassay samples as required. However, assessors discovered that of the 5 percent of workers required to submit job-specific bioassay samples, only one third provided them. A separate review also found that Radiological Control Operations staff only notified the bioassay laboratory about 33 percent of the samples workers submitted for analysis. Although worker dose is not assigned by job-specific bioassays, job-specific bioassays are important to determine if workers were exposed to undetected releases of radioactivity. (ORPS Report SR--WSRC-HPIH-1997-0002)

In September 1997, assessors completed a full assessment of all facilities that used either standing radiation work permits or job-specific radiation work permits and required workers to submit bioassay samples for the second quarter of calendar year 1997. Results of that assessment indicated that a significant number of workers who were not covered by the routine bioassay program were not submitting job-specific samples. Radiological Control Operations managers committed to revising the radiological work permit procedure by December 31, 1997, to strengthen bioassay requirements. In the interim, the Radiological Control Operations managers placed increased emphasis on the review of job-specific bioassay sample requests by requiring Radiological Control Operations facility personnel to submit a monthly summary of job-specific bioassay samples requested and an indication that they had notified the bioassay laboratory of the request.

On December 8, assessors conducted a follow-up self-assessment of the effectiveness of Westinghouse Savannah River Company's corrective actions to date and found that of 87 job-specific samples required for the month of October, only 12 samples had not been received by the bioassay laboratory. These individuals are being actively tracked to close out their delinquencies.

Westinghouse Savannah River Company implemented three corrective actions to prevent recurrence of the problem. These corrective actions included (1) changing procedures to clarify bioassay program requirements, (2) training Radiological Control Operations first-line supervisors on their bioassay program responsibilities, and (3) studying the need to revise bioassay program requirements to enhance compliance. Westinghouse also determined that the problems concerning the job-specific bioassay program were potential Price-Anderson Amendments Act noncompliances. On December 10, they reported these problems in the Noncompliance Tracking System.

OEAF engineers reviewed two occurrence reports that resulted from a May 12, 1997, DOE review of the Mound Plant bioassay program. Reviewers observed that several employees had signed radiological work permits that required bioassay analysis without submitting the required samples. Radiological health staff compared the radiological work permit rosters with a list of bioassays performed. They determined that 57 employees signed the permits but did not submit the required bioassay samples. (ORPS Report OH-MB-EGGM-EGGMAT04-1997-0004) Reviewers also discovered that some of the minimum detectable activities (MDAs) of record had not been updated and that some of the current calculated MDAs were lower than the MDAs of record. Recalculation of the MDAs back

to 1992 may result in reviewers finding additional exposures for up to 770 workers at Mound. Based on the MDA of record for plutonium-238, the estimated maximum possible additional dose is 900 mrem committed effective dose equivalent. (ORPS Report OH-MB-EGGM-EGGMAT04-1997-0005)

These events illustrate the importance of workers to submitting bioassay samples as required by the radiological protection program. Supervisors should ensure that workers submit job-specific bioassays as required by radiological permits or procedures. Also, the appropriate personnel in internal dosimetry organizations should ensure that methods are in place to provide for 100 percent traceability of bioassay samples. DOE/EH-0256T, rev 1, *Radiological Control Manual*, establishes practices for internal dosimetry and bioassay.

- Article 363, "Tritium Operations," states that because tritium emits low energy beta particles that cannot be monitored using external dosimeters, bioassay measurements to evaluate a worker's dose are required.
- Article 521, "Requirements," identifies the requirements for participation in an internal dosimetry program and the requirements for conducting bioassay monitoring.
- Article 522, "Technical Requirements for Internal Dosimetry," requires baseline bioassay monitoring, routine bioassay monitoring, and termination bioassay monitoring for termination of employment or completion of work involving the potential for internal exposure.

KEYWORDS: bioassay, dose, radiation protection, radiological work permit

FUNCTIONAL AREAS: Radiation Protection

2. FIRE PROTECTION CONCERNS IDENTIFIED AT OAK RIDGE Y-12 SITE

On December 15, 1997, at the Oak Ridge Y-12 Site, the site office manager informed the enriched uranium operations facility manager that a review of the fire protection program identified implementation deficiencies that resulted in a violation of operational safety requirements. The basis for interim operation states that a building fire with off-site consequences is not a credible scenario because the facility has a fire protection program. Deficiencies in the fire protection program include inadequate system testing, facility inspections, fire drills, and pre-fire plans. An inadequate fire protection program could result in loss of life, loss of use of a facility, and off-site exposure consequences. (ORPS Report ORO-LMES-Y12NUCLEAR-1997-0053)

Site office fire protection program reviewers identified the following concerns with fire protection program implementation.

- Water-sensitive areas are not identified.
- Testing frequencies specified in site procedures are not followed.
- Testing deficiencies are inadequately identified.
- System operability evaluations are inadequate.
- Heat detectors are not tested.
- System interlock testing is inadequate.
- Fire system inspection findings are not well communicated to the enriched uranium operations staff.
- Fire response drills are not conducted, and training for fire response drills is incomplete.
- Facility walk downs have not been performed.

The facility manager will implement the following compensatory measures while the inadequacies in implementation are resolved.

- Fire protection engineering personnel must approve all hot work until fire safety inspections have been completed.
- The facility manager must notify the operations manager of conditions that affect the operability of a system.
- Fire department response personnel will conduct "tabletop" reviews of the pre-fire plans, stressing fire fighting techniques to be used in the most vulnerable areas.

NFS has reported on similar authorization basis documentation inadequacies in the Weekly Summary. Following are some examples.

- Weekly Summary 97-46 reported two events regarding operational safety requirement violations at the Rocky Flats Environmental Technology Site. In the first event, fire protection personnel and a shift operating engineer discovered a fire-suppression supply valve in the closed position. The building manager determined that this constituted an operational safety requirement violation because two operable fire suppression systems are required and the closed valve rendered one of the two inoperable. In the second event, an operations manager reviewing completed surveillances determined that fire protection personnel performing a monthly surveillance did not notice the closed valve or see that several others were not locked opened as required by the surveillance procedure. The building manager determined that this was also an operational safety requirement violation because fire protection personnel failed to perform an adequate surveillance within the surveillance grace period. (ORPS Reports RFO--KHLL-371OPS-1997-0095 and RFO--KHLL-371OPS-1997-0097)
- Weekly Summary 97-15 reported that managers at the Oak Ridge National Laboratory determined that a monthly inspection of the fire protection system for the Radiochemistry Engineering Development Center was not performed as specified in the operational safety requirements. The managers were conducting their annual surveillance of inspection records to verify compliance when they discovered that Fire Department personnel missed the November 1996 inspection. (ORPS Report ORO--ORNL-X10REDC-1997-0002)

OEAF engineers searched the ORPS database for events with a nature of occurrence of safety status degradation and found 1,521 events. Figure 2-1 shows the root causes for these events. A review of these occurrences shows that managers reported 44 percent of the root causes as management problems, with 38 percent attributed to inadequate administrative control and 24 percent attributed to policy not adequately defined, disseminated, or enforced.

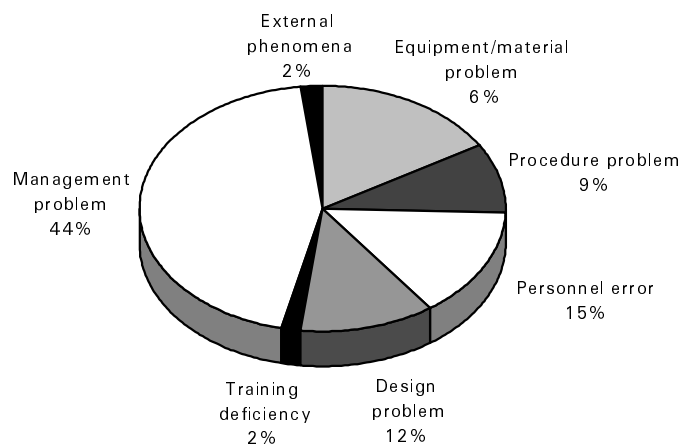


Figure 2-1. Root Causes for Safety Status Degradation¹

These events underscore the importance of all elements of a fire protection program. Administrative controls must be supported by testing and surveillance to be effective. Facility managers should review the following references for guidance on fire protection programs.

- DOE O 5480.22, *Technical Safety Requirements*, attachment 1, describes the purpose of surveillance requirements and states that each surveillance shall be performed within the specified interval. It also states that surveillance requirements must ensure that the quality of systems and components is maintained and the limiting conditions for operation are met. General principle 1 states: "A system is considered operable as long as there exists assurance that it is capable of performing its specified safety function(s)." Surveillance testing is essential in providing this assurance.
- DOE-HDBK-1062-96 "Fire Protection Handbook," August 1996, provides guidance for establishing comprehensive fire protection program requirements. The handbook states that (1) all fire protection system information should be documented in the appropriate level of detail, (2) fire protection documents should be reviewed by a person competent in the subject area, and (3) fire protection documents should be approved by the fire protection manager before use. The handbook requires generation of fire protection documents for system-related activities, including inspections, testing, maintenance, acceptance testing, calibration, and self-assessment.

¹ OEAF engineers searched the ORPS database using the graphical user interface for reports with a nature of occurrence code "1C" (safety status degradation) and found 1,521 events for which a root cause had been identified.

- DOE O 420.1, *Facility Safety*, section 4.2, establishes facility safety requirements for fire protection programs and related hazards. This Order requires written, comprehensive fire protection criteria, including the organization, training, and responsibilities of the fire protection staff and administrative aspects of the fire protection program. It also requires completing a "needs assessment that establishes the minimum required capabilities of site fire fighting forces" and including it in the site emergency plan.

KEYWORDS: fire protection, operational safety requirement, surveillance

FUNCTIONAL AREAS: Fire Protection, Surveillance

FINAL REPORTS

This section of the OE Weekly Summary discusses events filed as final reports in the ORPS. These events contain new or additional lessons learned that may be of interest to personnel within the DOE complex.

1. IMPROPER ELECTRICAL LINEUP CAUSES POWER OUTAGE

On June 22, 1997, stationary operating engineers improperly configured an electrical tie breaker for a building at the Rocky Flats Environmental Technology Site, causing a power outage. They closed a tie breaker between the normal and alternate feeders, then de-energized a feeder circuit on the normal supply so workers could replace a transformer fuse. When they de-energized the normal supply, the tie-breaker could not switch to the alternate supply and tripped. The tie breaker provides a connection between two sources of power and allows uninterrupted operation of connected loads when one power source is unavailable. Investigators determined that the operators did not understand parallel operations and that the tie breaker would have automatically switched to the other power source if they had left it in the normal operating alignment. Failure to understand the system operation led to a building power outage. (ORPS Report RFO--KHLL-SOLIDWST-1997-0026)

Investigators determined that the operators did not request additional information from plant power personnel and did not obtain clear instructions before beginning the evolution. They also determined that the stationary operating engineers did not have access to written instructions regarding abnormal utility systems lineups. Investigators determined that the operators carried out the tie-breaker reconfiguration without either obtaining the needed information or stopping the evolution until they received clear instructions.

Facility managers determined that the root cause of this event was a training deficiency (insufficient practice or hands-on experience) because the stationary operating engineers had not been formally trained on the electrical distribution breaker and tie breaker configurations. Facility managers determined that the direct cause was a procedure problem (defective or inadequate procedure) because no procedures existed for abnormal utility system lineups. They determined that the operators reconfigured the breakers because plant power personnel requested access to the transformer fuse.

Facility managers determined that the contributing cause of this event was personnel error (communication problem) because the operators did not request or receive a formal pre-evolution briefing for this unusual activity. The purpose of a pre-evolution briefing is to ensure that

appropriate operations and support personnel clearly understand the work to be performed, have an opportunity to ask questions or raise concerns, and have enough information to prevent personnel errors stemming from misunderstandings or inadequate communications. Investigators determined that the operators could not ask questions because there was no briefing, so they made incorrect assumptions. The facility manager directed the appropriate staff to implement the following corrective actions.

- Develop and issue a procedure for performing abnormal building utility lineups. The procedure will require personnel to (1) perform a pre-evolution briefing, (2) review applicable procedures, (3) obtain a written plan if a procedure is not available, and (4) obtain authorization from the on-duty/on-call shift manager.
- Train all stationary operating engineers on tie-breaker operation, electrical distribution breakers, automatic transfer switch operations, and system configuration as a part of their qualification requirements.
- Post an operator aid at the building switch gear and include any applicable diagrams.
- Brief all building personnel on the importance of effective communication.

The facility manager also directed facility personnel to issue a lessons learned bulletin on this event.

NFS reported a similar event in Weekly Summary 97-50. Operators at Los Alamos National Laboratory Chemistry and Metallurgy Research Facility placed a control switch for a fan motor controller in manual mode and caused a positive ventilation condition. A power fluctuation on the main electrical feeder for an operating exhaust fan caused the fan to stop. Critique members determined that the operators who placed the control switch in manual did not understand the logic associated with the automatic controls and did not consider power fluctuations that could affect the protection logic. (ORPS Report ALO-LA-LANL-CMR-1997-0023)

OEAF engineers searched the ORPS database for all events that involved training as the root, direct, or contributing causes and found 2,869 reports. Figure 1-1 shows the distribution of the training deficiencies for these events. A review of these occurrences shows that facility managers reported 31 percent of the occurrences as no training provided; insufficient practice or hands-on experience accounted for an additional 31 percent.

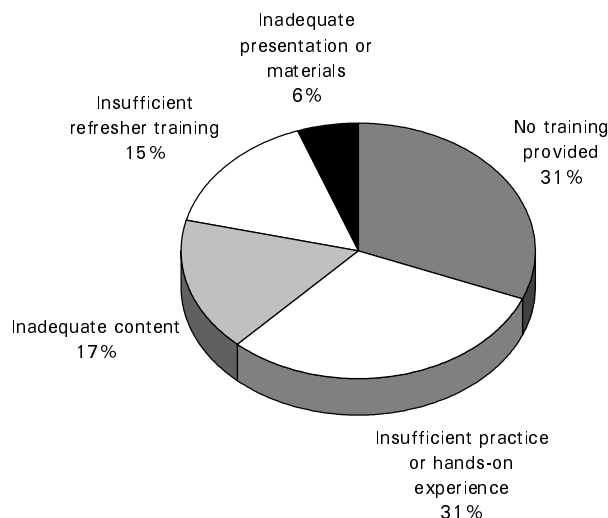


Figure 1-1. Training Deficiency Distributions¹

These events illustrate the importance of operators understanding the control schemes and system logic that affect the operation of facility equipment. Training programs should address operating features and controls in systems training courses. Configuration changes should also be addressed in procedures, with notes or precautions that alert operators to the fact that protective features may be defeated if systems are in manual modes. These events also emphasize the need for a questioning attitude, written instructions to avoid assumptions, pre-evolution briefings, and clear communications.

Facility managers should reinforce the need for direct links between operator qualifications and task assignments. Facility managers should review their training program records and controls to ensure that staff are qualified and certified for the tasks to which they are assigned and that procedures exist for infrequently performed operations. Employees should also accept the responsibility for meeting qualification requirements.

- DOE O 5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities*, states that the purpose of the Order is to assure that all persons are qualified to carry out their assigned responsibilities. Chapter I, sections 7.a.(1) and 7.a.(2), provide requirements for developing and maintaining training to meet the position requirements. Section 7.d.(4)(d) requires training in general and specific facility operating characteristics, facility instrumentation and control, and facility protection systems. Training department personnel also need to rigorously apply the principles and requirements of a systematic approach to training as defined in chapter I.7.b of the Order.

¹ OEAF engineers searched the ORPS database using the graphical users interface for reports with a root cause code "5A" (no training provided) OR a direct cause code "5A" OR a contributing cause code "5A" AND a root cause code "5B" (insufficient practice or hands-on experience) AND a direct cause code "5B" OR a contributing cause code "5B" AND a root cause code "5C" (inadequate content) OR a direct cause code "5C" OR a contributing cause code "5C" AND a root cause code "5D" (insufficient refresher training) OR a direct cause code "5D" OR a contributing cause code "5D" AND a root cause code "5E" (inadequate presentation or materials) OR a direct cause code "5E" OR a contributing cause code "5E" and found 2,869 reports.

- DOE-STD-0101T-93, *TAP 1 Training Program Manual*, requires a systematic training process that fulfills job-related training needs. The standard also requires identification, documentation, and inclusion of the tasks needed for competent job performance in training programs.
- DOE-STD-1012-92, *Guide to Good Practices for On-The-Job-Training*, provides guidance on each phase of the performance-based training process. Chapter 3 of the standard states: "training requirements can be identified by performing needs analysis, job analysis, and task analysis . . . to provide assurance that training is appropriate for the expected performance."
- DOE O 5480.19, *Conduct of Operations Requirements for DOE Facilities*, chapter XVI, "Operations Procedures," states that operations procedures provide direction to ensure that the facility is operated safely and within its design basis. Procedures are also a key factor affecting operator performance. Attention should be given to writing, reviewing, and monitoring operations procedures to ensure the content is technically correct and the wording and format are clear. As stated in the Order: "Procedures should be developed for all anticipated operations, evolutions . . . and . . . should provide administrative and technical direction to conduct the intent of the procedure effectively."

KEYWORDS: operations, training and qualifications, electrical systems

FUNCTIONAL AREAS: Operations, Training and Qualification

2. INADEQUATE SHIFT TURNOVER RESULTS IN VIOLATION

On June 6, at Idaho National Engineering Laboratory, a shift facility supervisor placed a laboratory in repair mode, prohibiting radioactive and hazardous material handling, because a radiation stack monitor was inoperable. The facility safety analysis report limiting condition for operation requires the radiation stack monitor to be operable when the laboratory is in an operational mode. However, during the morning shift change on June 9, the shift facility supervisor failed to notify the on-coming shift of the laboratory repair-mode status and the on-coming shift facility supervisor made a log entry that the laboratory was in an operational mode. Later the same day, a radiation control technician discovered that the radiation stack monitor was inoperable. This led to the laboratory being operational while the radiation stack monitor was inoperable and resulted in the violation. Failure to perform a complete shift turnover led to a limiting condition for operation violation and could have resulted in an undetected environmental release. (ORPS Report ID--LITC-SMC-1997-0002)

Facility managers determined that the direct cause of this event was that the off-going shift facility supervisor did not use an operations turnover checklist as required by procedures. The checklist would have indicated the correct laboratory status, and the on-coming facility supervisor would have been aware of the repair-mode status. Facility managers determined that inadequate verbal communication contributed to this event because the off-going shift facility supervisor failed to verbally communicate the laboratory status to the on-coming shift facility supervisor during a telephone discussion of operator log and round sheet information.

Facility managers determined that the root cause of this event was a management problem (policy not adequately defined, disseminated, or enforced) because managers failed to adequately define the policies and expectations identified in the operations turnover checklist procedure. They determined that management enforcement of the procedural requirement to use a checklist would have prevented this event. Facility managers will perform the following corrective actions.

- Brief facility shift supervisors and facility supervisors on the requirement to use operations turnover checklists and emphasize the need for the on-coming shift to personally review written logs, round sheets, and any other relevant information that could impact safe and efficient functioning of the facility.
- Review the shift turnover process and implement enhancements.
- Develop a management policy to implement the requirements identified in the operations turnover procedure.

NFS has reported inadequate shift turnover events in several Weekly Summaries. Following are some examples.

- Weekly Summary 97-31 reported that an operator at the Savannah River Site incorrectly determined that a tank inlet valve was closed when it was actually open and allowed acid to transfer to a tank that was supposed to be isolated. The operator presumed the valve was closed based on the previous shift's operation of the system. Investigators determined that the shift turnover was inadequate and there were no log entries indicating the actual lineup of the system. (ORPS Report SR--WSRC-HCAN-1997-0031)
- Weekly Summary 96-36 reported that operators at the Savannah River Site operated a facility after the time limit for a limiting condition for operation had expired. Maintenance technicians were repairing facility exhaust fans and caused the ventilation system to be inoperable. The limiting condition for operation required the operators to place the facility in warm standby. The following day, the shift operations manager realized that the limiting conditions for operation time limit had expired and immediately placed the facility in warm standby. He was not previously aware of the limiting conditions for operation time limit because of an inadequate shift turnover. (ORPS Report SR--WSRC-HBLINE-1996-0017)

These events illustrate the need for operators to be aware of and communicate any action, operation, or equipment status that has the potential to impact an on-coming shift. Conduct of operations principles (such as complete and thorough communications and the need to satisfy all the requirements of the shift turnover process) are principal components for efficient, effective, and safe operations. In addition, managers are responsible for ensuring that policies are adequately defined and adhered to, both to prevent events from occurring and to enhance the safety of personnel, equipment, and the environment.

Facility managers should review the following documents to ensure that (1) operations personnel understand their shift turnover responsibilities and (2) management policies and procedures exist that address proper shift turnover and clear communication.

- DOE O 5480.19, *Conduct of Operations Requirements for DOE Facilities*, chapter II, "Shift Routines and Operating Practices," states that the on-duty shift supervisor maintains authority and responsibility for all facility operations. The Order also states that it is the responsibility of the on-shift operating crew to safely operate the facility through adherence to operating procedures and technical specification or operational safety requirements and sound operating practices. Chapter VIII, "Control of Equipment and System Status," discusses the control and status of equipment and states that the operations supervisor is responsible for maintaining proper configuration. Chapter XI, "Logkeeping," provides guidelines on establishing operating logs, recording information, ensuring legibility of entries, and performing reviews of logs. Chapter XII, "Operations Turnover," states that shift turnover is a critical part of DOE facility operations. The Order also states that on-coming personnel should not assume operational duties until both they and the off-going personnel have a high degree of confidence that an appropriate information transfer has taken place. On-coming personnel should conduct a comprehensive review of appropriate written and visual information before responsibility for the shift is transferred. Shift turnovers should be guided by a checklist and should include a thorough review of appropriate documents describing important aspects of facility status and an inspection of appropriate facility instrumentation.
- DOE-STD 1038-93, *Guide To Good Practices For Operations Turnover*, states that effective turnovers are crucial to the safety of DOE facilities. The turnover process should ensure that on-coming personnel have an accurate picture of facility status and that past and scheduled operations are reviewed. Briefings conducted near the end of each shift enhance shift turnover and operator awareness of plant status and identify needed follow-up actions. As a result, operators involved are informed and prepared to conduct a more thorough shift turnover to on-coming personnel.
- DOE-STD-1031-92, *Guide to Good Practices for Communications*, discusses the need for clear, formal, and disciplined communications and provides guides to improve communications.

KEYWORDS: conduct of operations, inattention to detail, limiting conditions for operations

FUNCTIONAL AREAS: configuration control, operations, procedures, training and qualification

PRICE-ANDERSON AMENDMENTS ACT (PAAA) INFORMATION

1. WESTINGHOUSE SAVANNAH RIVER FINED FOR WORKER-SAFETY VIOLATIONS

On December 5, 1997, the DOE Office of Enforcement and Investigation issued a Preliminary Notice of Violation and proposed civil fine of \$93,750 to Westinghouse Savannah River Company, the Savannah River Site contractor. DOE issued the Preliminary Notice of Violation and fine for safety violations discovered by investigators after a crane operator was internally exposed to plutonium last December while performing decontamination work in the F-Canyon reprocessing facility. The Notice cites Westinghouse Savannah River Company for failing to follow work control procedures designed to protect personnel from radiation exposure. The exposed worker received an estimated whole body dose of 11.6 rem total effective dose equivalent and in excess of 200 rem to the bone surface. This was more than twice the 5-rem annual limit for whole body and four times the 50-rem annual limit to the bone surface. Radiological controls personnel discovered the exposure during a routine review of the worker's bioassay samples in April 1997. [NTS Report NTS-SR-WSRC-FCAN-1997-0001; Letter, DOE (P. Brush) to Westinghouse Savannah River Company (A. Schwallie), 12/05/97]

Investigations conducted by DOE and Westinghouse established that the exposure was the result of multiple failures to follow work planning and control procedures. Problems cited by investigators included the following.

- Radiological control personnel failed to stop work and evacuate personnel after determining that airborne radioactivity in the work area exceeded approximately 100 times the stop-work level of the radiological work permit.
- Personnel made entries and performed work in radiation areas under the control of a radiological work permit that was never completed and issued as an approved work permit document.
- Personnel did not use a primary containment to prevent the spread of contamination, even though radiological controls personnel detected high levels of alpha and beta contamination in the work area.
- Personnel re-entered an airborne radioactivity area after a continuous air monitor had alarmed without an evaluation for changing radiological conditions. The airborne radioactivity exceeded the protection factor for their respirators.
- The continuous air monitor (with an alarm) was located 300 feet away from the area where personnel were removing a containment hut. This great distance from the work area delayed prompt evacuation when the monitor detected high levels of airborne radioactivity.

Both DOE and contractor investigators concluded that inadequate oversight by management allowed these problems to go unnoticed and uncorrected.

NFS summarized the findings from the Type B Investigation report on the F-Canyon intake event in Weekly Summary 97-33. In that report, Board members concluded that Westinghouse Savannah River Company failed to adequately implement radiological controls and requirements for peripheral work. They also failed to provide (1) an adequate level of operations supervision and management oversight for peripheral work, (2) an adequate level of radiological controls supervision and management oversight for peripheral work, and (3) adequate management analyses of

operational and radiological conditions associated with peripheral work activities. (ORPS Report SR--WSRC-FCAN-1997-0009 and Type B Accident Investigation Board Report of the Plutonium Intake by a Crane Operator at the Savannah River Site F-Canyon)

NFS reported assessments of civil penalties under the Price-Anderson Amendments Act for radiation protection violations in Weekly Summaries 97-12, 96-43, and 96-30.

- Weekly Summary 97-12 reported that DOE assessed Lockheed Martin Idaho Technologies Company \$25,000 for failure to adhere to and implement necessary administrative controls and procedure requirements to maintain radiation exposures as low as reasonably achievable. This failure resulted in five construction workers receiving radiation doses ranging from 652 mrem to 678 mrem and a sixth worker receiving minor skin contamination. (ORPS Report ID--LITC-PHASEOUT-1996-0001)
- Weekly Summary 96-43 reported that DOE assessed both Kaiser-Hill Company and Safe Sites of Colorado Company \$37,500 because radiological operations were performed contrary to radiation work permit requirements at Rocky Flats. These operations resulted in a release of radioactive material exceeding 1 million dpm/100 cm² and an intake that was 8 percent of the DOE annual dose limit. (ORPS Reports RFO--KHLL-SOLIDWASTE-1996-0022 and RFO--KHLL-771OPS-1996-0063)
- Weekly Summary 96-30 reported that DOE assessed Westinghouse Hanford Company \$37,500 because a pipefitter at the Hanford Tank Farms received a 13 rem radiation dose to his hands while removing a highly contaminated thermocouple from a high-level radioactive waste storage tank. (ORPS Report RL--WHC-TANKFARM-1996-0017)

Westinghouse Savannah River Company management has 30 days to reply to the Preliminary Notice of Violation and admit or deny the alleged violations. The Preliminary Notice of Violation will become final if they admit the allegations and provide sufficient corrective actions within the 30-day period.

DOE could have fined Westinghouse \$37,500 for each of three violations connected to the worker's exposure, but reduced the potential \$112,500 total fine because of the contractor's comprehensive corrective actions, including the decision to undertake a site-wide review of its radiation protection procedures. Because the violations occurred before DOE increased the potential fines for safety infractions, Westinghouse did not have to pay \$55,000 per penalty. Westinghouse was not assessed the fines based upon the new fine structure because the violations occurred before November 7, 1997.

The Price-Anderson Amendments Act subjects DOE contractors to penalties for violations of applicable DOE nuclear safety rules. The Office of Enforcement and Investigation may reduce penalties when a DOE contractor promptly identifies a violation, reports it to DOE, and undertakes timely corrective action. DOE has discretion to not issue a notice of violation in certain cases. The Noncompliance Tracking System (Weekly Summaries 95-17, 95-20) provides a means for contractors to promptly report potential noncompliances and take advantage of provisions in the enforcement policy.

KEYWORDS: airborne radioactivity, intake, radiation protection, work control, Price-Anderson Act

FUNCTIONAL AREAS: Radiation Protection, Work Planning